

Please replace the third full paragraph on page 3, beginning line 27, with the following:

A1 There is a need within the art to generate alternative cellulase enzymes capable of assisting in the commercial-scale processing of cellulose to sugar for use in biofuel production. Against this backdrop the present invention has been developed. The potential exists for the successful, commercial-scale expression of heterologous cellulase polypeptides, and in particular novel cellulase polypeptides with or without any one or more desirable properties such as thermal tolerance, and partial or complete resistance to extreme pH inactivation, proteolytic inactivation, solvent inactivation, chaotropic agent inactivation, oxidizing agent inactivation, and detergent inactivation. Such expression can occur in fungi, bacteria, and other hosts.

Please replace the second full paragraph on page 4, beginning line 11, with the following:

A2 The present invention provides AvI_{III}, a novel member of the glycoside hydrolase (GH) family of enzymes, and in particular a thermal tolerant glycoside hydrolase useful in the degradation of cellulose. AvI_{III} polypeptides of the invention include those having an amino acid sequence shown in SEQ ID NO:1, as well as polypeptides having substantial amino acid sequence identity to the amino acid sequence of SEQ ID NO:1 and useful fragments thereof, including, a catalytic domain having significant sequence similarity to the GH74 family/a carbohydrate binding domain (type III). See FIG 1.

Please replace the third full paragraph on page 13, beginning line 19, with the following:

A3 "Thermal tolerant" refers to the property of withstanding partial or complete inactivation by heat and can also be described as thermal resistance or thermal stability. Although some variation exists in the literature, the following definitions can be considered typical for the optimum temperature range of stability and activity for enzymes: psychrophilic (below freezing to 10°C); mesophilic (10°C to 50°C); thermophilic (50°C to 75°C); and caldophilic (75°C to above boiling water temperature). The stability and catalytic activity of enzymes are linked characteristics, and the ways of measuring these properties vary considerably. For industrial enzymes, stability and activity are best measured under use conditions, often in the presence of substrate. Therefore, cellulases that must act on process streams of cellulose must be able to withstand exposure up to thermophilic or even caldophilic temperatures for digestion times in excess of several hours.

AM
Please replace the third full paragraph on page 15, beginning line 23, with the following:

Cellulases belong to the GH family of enzymes. Cellulases are produced by a variety of bacteria and fungi to degrade the beta-(1,4)-glycosidic bond of cellulose and to so produce successively smaller fragments of cellulose and ultimately produce glucose. At present, cellulases are found within at least 11 different GH families. Three different types of cellulase enzyme activities have been identified within these GH families: exo-acting cellulases which cleave successive disaccharide units from the non-reducing ends of a cellulose chain; endo-acting cellulases which randomly cleave successive disaccharide units within the cellulose chain; and β -glucosidases which cleave successive disaccharide units to glucose (J. W. Deacon, (1997) Modern Mycology, 3rd Ed., ISBN: 0-632-03077-1, 97-98).

AS
Please replace the fifth full paragraph on page 16, beginning line 31, with the following:

As described more fully in the Examples below, AviIII, a novel thermostable cellulase, has now been identified and characterized. The predicted amino acid sequence of AviIII (SEQ ID NO:1) has an organization characteristic of a cellulase enzyme. AviIII contains a catalytic domain - carbohydrate binding domain unit. In particular, AviIII includes a GH74 catalytic domain (amino acids from about A37 to about G776 and a carbohydrate binding domain type III (CBDIII) (amino acids from about V859 to about at least Q946).

AL
Please replace the second full paragraph on page 17, beginning line 15, with the following:

AviIII, as noted above, has a catalytic domain, identified as belonging to the GH74 family. The GH74 domain family includes an avicelase from *Aspergillus aculeatus*.

A7
Please replace the second full paragraph on page 18, beginning line 34, with the following:

As listed and described in Tables 1 and 5, the isolated AviIII polypeptide includes an N-terminal hydrophobic region that functions as a signal peptide, having an amino acid sequence that begins with Met1 and extends to about A36; a catalytic domain having significant sequence similarity to a GH74 family domain that begins with about A37 and extends to about G776; a carbohydrate binding domain having sequence similarity to such